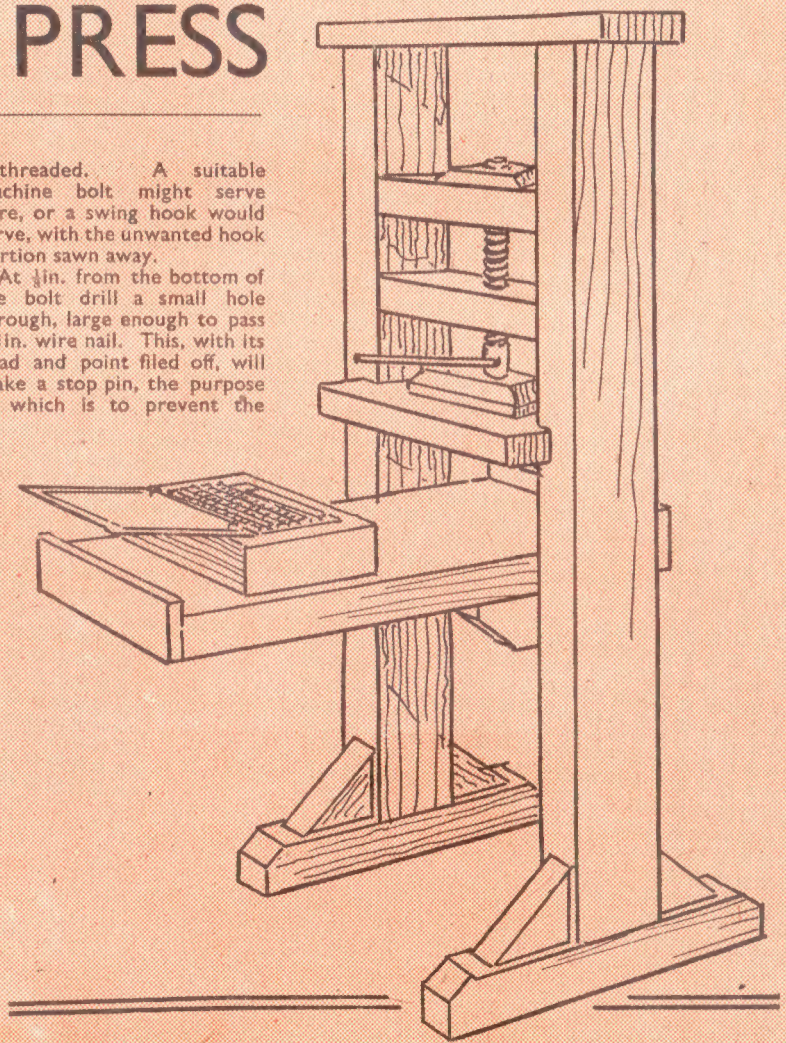
Hobbies WEEKLY

CONTENTS

February 28th, 1951 Price Fourpence Vol. III No. 2887

A MODEL PRINTING PRESS



THIS is an interesting model to construct, especially for exhibition purposes. An added interest is the fact that it is capable of really doing a printing job, though, naturally, a small one. Its construction presents no difficulty and it should prove a fascinating job of work.

Fitting

A front and side view of the model are shown at Fig. 1. The actual length and thickness of parts, not given in the text, are provided in the cutting list at the end of the article. The upright posts are mortised and tenoned into the feet and top crossbar. The bars (A) and (B), through which the screw, which operates the platen (C) works, are also tenoned into the posts.

The table supports (D) are grooved into the posts just ¼in. deep. The angle brackets between feet and posts are cut from ½in. thick wood, and are nailed and glued in place. The rest of the joints mentioned are fixed with screws, not nailed and glued, so that all can be taken apart if repairs or adjustments are necessary. Round-headed screws should, for preference, be employed; they are not so unsightly as the flat-head type in a model.

The Screw

Remove bars (A) and (B) and in the centres of them bore ⅜in. or ½in. holes through for the screw. This can be a bolt, either ⅜in. or ½in. and 4ins. long, exclusive of head, which should be cut off. About 1½ins. of this should be unthreaded. A suitable machine bolt might serve here, or a swing hook would serve, with the unwanted hook portion sawn away.

At ¼in. from the bottom of the bolt drill a small hole through, large enough to pass a 1in. wire nail. This, with its head and point filed off, will make a stop pin, the purpose of which is to prevent the

bolt leaving the platen when raised or lowered. At ½in. above this hole, drill a ⅛in. hole through the bolt, and another ⅛in. hole directly above this, at right angles to it. These holes are for the lever to act in for turning the screw.

In the top of bar (A) cut a recess round the bolt hole into which the nut, belonging to the bolt, can sit. Cover this with a 3in. by 1½in. length of ¼in. wood. This part is, of course, bored to fit the bolt, and is glued over (A) and strengthened with a screw, either side of the nut, as in detail Fig. 2. Now to make the platen (C).

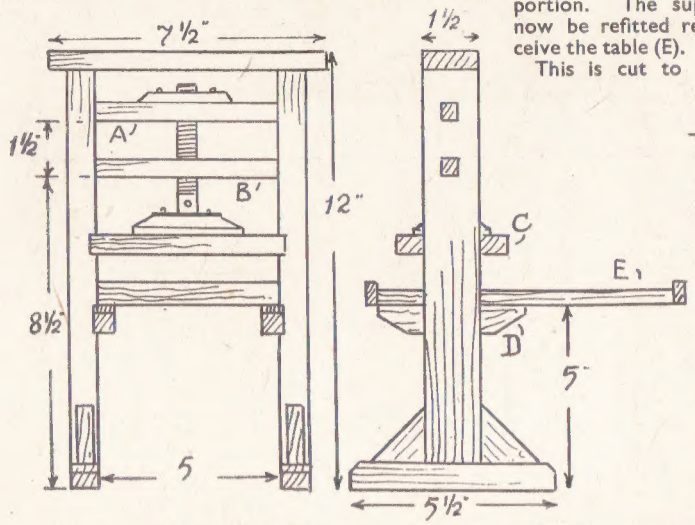


Fig. 1—Front and side view of complete model

The Platen

This is shown in plan and side section in Fig. 3. It consists of two pieces of wood, joined together, the upper piece carrying the screw. Cut the lower piece to dimensions given in the plan, and at each end cut away pieces, as shown, ¼in. thick, to pass over the posts. The surfaces of this part should be planed quite flat.

The upper piece is smaller, shown by the dotted rectangle, and in its centre, top surface, a 1in. diameter recess is cut out, ¼in. deep, with a centre bit. Bevel off the edges, as in the drawing. From a piece of sheet metal, about $\frac{1}{16}$in. thick, cut a rectangle the size of the flat portion of the wood, and in its centre drill a hole to admit the bolt, and a small hole at each corner for fixing screws.

At the bottom of the recess in the upper part of the platen lay a disc of thin metal to prevent the bottom ends of the bolt indenting the wood under pressure. Push the bottom end of the bolt through the metal plate and insert the stop pin to prevent its withdrawal. Now screw the plate to the wood and see that the bolt can rotate easily. If tight, then bore the recess deeper.

All being satisfactory, remove the table supports (D), replace bars (A) and (B) and work the bolt through them with the fingers. See the platen rises and falls smoothly, then screw the upper part, holding the bolt, to the lower portion. The supports can now be refitted ready to receive the table (E).

This is cut to dimensions given in the cutting list, and at each end a ¼in. by ⅜in. strip of wood is glued and nailed to form end rims. Place in position between the posts, let the rear end project just 1½ins. beyond the posts, and fix with two screws, each side, through the posts.

CUTTING LIST

Posts (2)—12ins. by 1½ins. by ¾in.
Feet (2)—5½ins. by ¾in. by ¾in.
Top bar—7½ins. by 1½ins. by ½in.
Bars (A) and (B)—6½ins. by 1½ins. by ½in.
Supports (D)—4ins. by ¾in. by ½in.
Table (E)—8ins. by 5ins. by ½in.
Lower platen—5½ins. by 3½ins. by ½in.
Upper platen—3ins. by 2ins. by ½in.
Panel of ¼in. fretwood—4ins. by 9ins.*
Smaller items from scrap
*For economy's sake the end rims of table can be cut from the panel in two pieces for each and joined end to end.

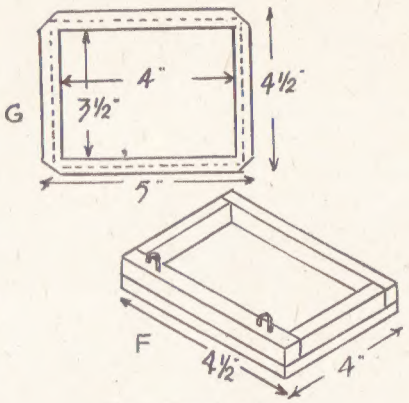


Fig. 4—Type box details

Type Box

The chase or type box (F) in Fig. 4, is a rectangle of ¼in. fretwood. Strips of wood, ⅜in. thick and ½in. wide are firmly glued and screwed to it, making a shallow tray to hold the type. A metal frame is now made to the size given at (C) from tinplate. This is to hold the padding between the type and flat base of the platen, to even out the impression.

Bend the short sides of the frame over at the dotted lines (midway) to make a pair of grooves into which the padding, in this case a thin sheet of smooth card covered with one or more sheets of white paper, can be slid. The front long side is bent over and hammered down flat, the rear one bent under and also flattened, so as not to prevent a free passage to the padding. In the front side at ½in. from each end punch a hole through.

Lay this frame on the type box, and where the holes are punched, prick through to the wood underneath with an awl. Remove, and in these holes drive a pair of small staples partly in, one leg of each only being driven into the wood. File off about half of the other legs, leaving two pins, with bent upper pieces, as in the drawing at (F). The frame can now be pushed over these pins, and should lie flat on the type bed.

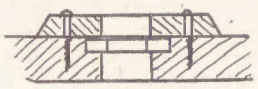


Fig. 2—Section detail

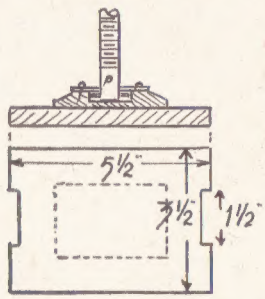


Fig. 3—The press parts

Now test the arrangement. Firstly, for turning the screw, provide a 4in. length of ⅛in. steel rod, which is inserted in the most convenient hole in the screw and moved sideways. Place the type box under the platen, and the latter should, under pressure of the screw above, press on the frame evenly, and clear the pins on which the frame is held in place. All being well, the model is ready for work.

The depth of the type box precludes the use of standard printer's type, but it may be possible to obtain a printing outfit in which the type is of metal, not rubber, but about ½in. in length. Such outfits used to be made for stamping names and addresses, using a black oily ink, and may be still obtainable.

If not, an ordinary set of rubber type can be bought and used, but a light pressure only should be employed. The press could also be used, up to its capacity, for taking prints from lino blocks.

In use the paper is laid on the frame and kept in position while the frame is swung over to the type faces with the forefingers. It is then, after the type has been inked, pushed under the platen and the impression taken. (358)

For home, office or shop this is a practical
TELEPHONE BRACKET

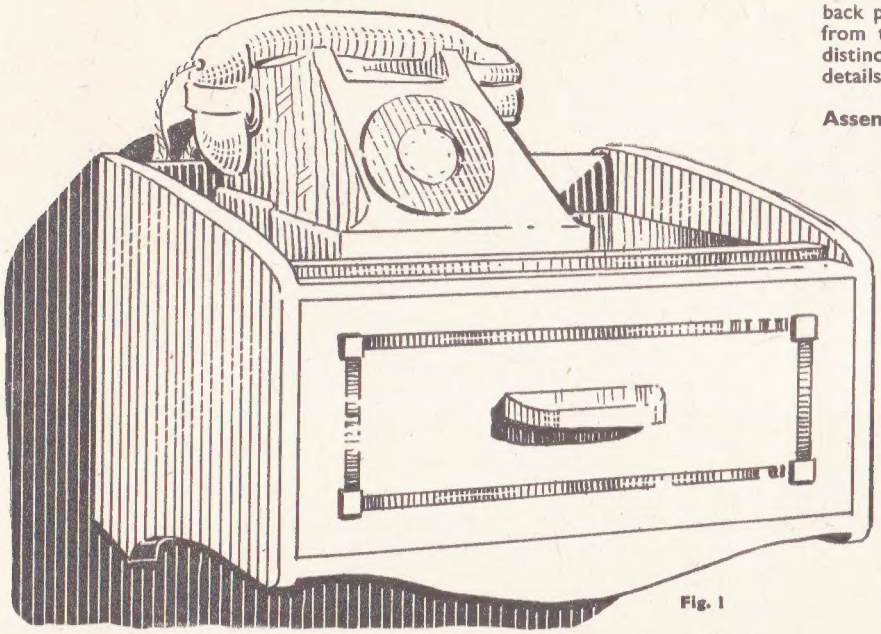


Fig. 1

WE have been asked by a reader for a design and constructional details of a bracket fitment for a home telephone. He mentions that he would like a drawer incorporated in the design in which a couple of pairs of gloves may be kept.

Now, this idea may appeal to a good many of our readers and workers, and some will, doubtless, make a little pocket money by making up some brackets on the lines shown and described here.

Careful measurement has been taken of an ordinary telephone instrument, and our details have, therefore, been based on these measurements, with a view also to economy in wood and simplicity of construction.

The overall size of the article is, length approximately 12ins., width from front to back 9¼ins. and depth 9ins. The drawer is of useful size, being also based on measurements taken from a large-size pair of gent's gloves.

Practical Outlines

The whole fitment, as can be seen from Fig. 1, is purposely kept plain in outline and with but little shaped work introduced to add just a touch of character and style. The stained or inlaid banding on the drawer front need not, of course, be included unless desired, a plain polished or painted front would, doubtless, look almost as well.

It has been considered a good point in the design to have the wiring of the instrument carried down the back of the bracket and thus kept as far as convenient out of sight. This is brought about by having the actual wood panel forming the back, set in ⅜in. from the back edge of the main shaped ends.

This method also makes for strength, as the screws forming the fixing of the back panel to the ends are kept well in from the edges of the latter. This is distinctly seen in the two constructional details Figs. 2 and 3.

Assembly

The method of assembling the bracket may be briefly described next, and we think, this, in conjunction with the full cutting list of wood required, should greatly simplify matters for the worker in making this useful article. The two shaped ends (A) are made first, and shallow grooves are to be cut in them to receive the top shelf (B).

Now the simplest way to form these grooves is by cutting them so that they run through at the back, as seen in Fig. 2. Where the top shelf is stopped off at the front, just before reaching the edge of the ends (A), the groove is cut down neatly with the chisel.

The tenon saw, in cutting the grooves can then be brought up to this point and the unwanted wood easily cleaned away.

Back and Shelf

It will be seen later when the back panel is fitted that the tail end of the grooves are not seen. If the grooving or housing, as it is termed, is carried out as above, it will be noted that the top shelf (B) must be notched out at its front corners to fit into the grooves in the ends (A).

Below this shelf the rail (C) is either housed into the brackets, in a similar manner to the shelf above, or simply butted up and screwed through at the ends, the heads of the screws being countersunk and afterwards filled with stopping.

Another, and cleaner method, perhaps, would be to insert round dowel pins into the ends of the rail, the dowels being dipped in glue and driven home

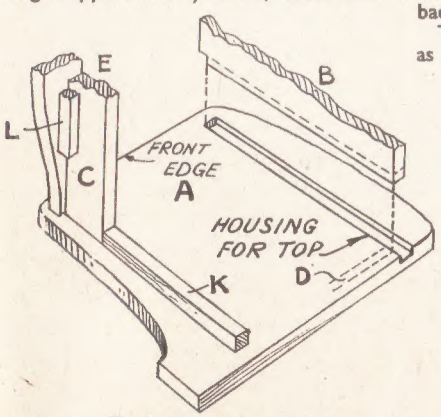


Fig. 2—Under view of parts

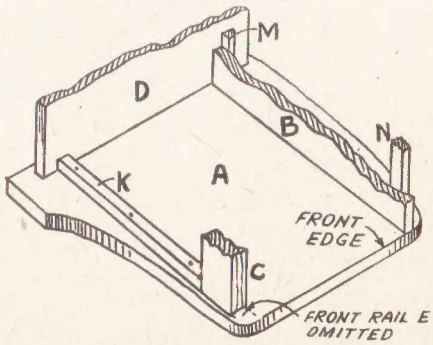


Fig. 3—Further construction

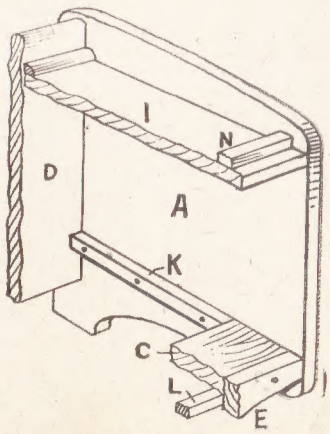


Fig. 4—End view inside

and the projecting heads cleaned off flush. The back (D) is a plain panel of wood, simply fitted to go between the ends (A), to which they are screwed or dowelled.

Along the front of rail (C) goes the front shaped rail (E). This is simply screwed on with its top edge flush with the top surface of rail (C), as seen in Figs. 2 and 4. Countersunk screws are again used here with heads filled.

The Drawer

It now remains, before making the drawer, to add just the few smaller items, (K), (L), (M) and (N) to the almost completed box. Piece (K) is a fillet of square wood screwed to the inside of the ends between rail (C) and the back (D). There are two, of course, and they form the runners for the drawer. Pieces (L) are simply stiffening blocks glued in the angle at the back of rail (E) and under (C).

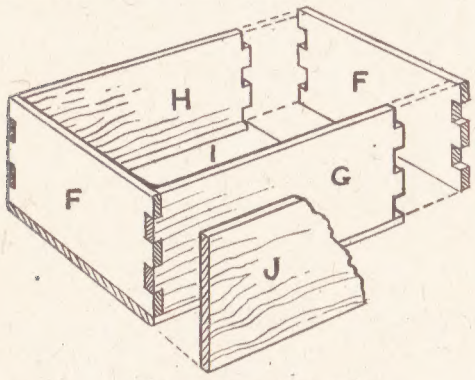


Fig. 5—Drawer construction

The quarter round fillet (M) is optional but adds to the finished appearance of the back and prevents the instrument from contact with the top of the back panel. Fillet (N) is required to hold the front of the instrument steady on the shelf while the receiver is being lifted.

All the foregoing pieces are glued firmly and either screwed or nailed with fine nails. The top edge of the back panel (D), it will be observed, is rounded off neatly and smoothly.

The Drawers

This needs but little explanation, as the sectional diagram Fig. 5 fully illustrates its method of construction and assembly. The rails (F), (G) and (H) are lock-jointed together to make a firm glued fixing and the floor (I) simply laid over it and screwed or pinned to it. The panel (J) is made to correct size to fit on the front of the 'box' by standing the latter upright on a panel of wood and carefully scribing round it. A perfect fit is thus assured, and after cutting round and gluing to the front (G), all edges may be glasspapered off and all surfaces made level and smooth.

The drawer may be found at first to be a tight fit into its opening, in fact, it might not enter at all until each of the sides and top have been rubbed down on a sheet of coarse glasspaper, with a finishing of fine paper. Thus the construction of the fitment, and a few further remarks may be added regarding the shaped parts.

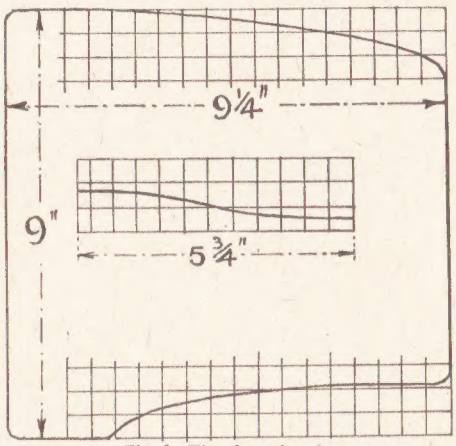


Fig. 6—The shaped ends

The Ends

In Fig. 6 is given an outline of one of the ends of the 'box', with ½in. squares drawn over these parts which are to be shaped. It should, therefore, be a simple matter to draw in the squares with tee square and set square, or a try square; and follow the simple curved line through them to get a correct outline.

The same remark applies to the half section of the front rail (E), half only of which is given. When the half has been lined in, trace it on to thin paper, then reverse the latter, placing it to a common centre line and put a piece of carbon paper beneath it and proceed to draw in the second half. Transfer the completed outline to the wood and cut round in the usual way.

Referring again to the outline of the bracket ends of the 'box', it will be understood that a piece of wood cut square and to size 9¼ins. by 9ins. will first be made, and the paper tracing of the curved top as well as the lower edge, be laid in place on the wood with carbon paper beneath for transferring the lines to it.

The one cut-out end can be used as a template for drawing round to complete the second end.

Finish

The matter of finish to the wood is largely dependent upon the sort of wood used. If oak is obtainable, this would be ideal and a stain and french polish finish is best, or the surfaces may be stained and waxed polished, The cutting list will be found most useful to the worker about to make up the telephone fitment.

(354)

CUTTING LIST

Side (A)—Two—9ins. by 9¼ins. by ½in.
Shelf (B)—One—11½ins. by 8½ins. by ⅜in.
Shelf, if housed ⅛in. into Sides (A) will be 11¾ins. by 8½ins. by ⅜in.
Rail (C)—One—11½ins. by 1½ins. by ½in.
Rail, if housed ⅛in. into Sides (A) will be 11¾ins. by 1½ins. by ½in.
Back (D)—One—11½ins. by 8ins. by ⅜in.
Rail (E)—One—11½ins. by 1½ins. by ½in.
Drawer Side (F)—Two—8½ins. by 4¾ins. by ⅜in.
Drawer Front (G)—One—11½ins. by 4¾ins. by ⅜in.
Drawer Back (H)—One—11½ins. by 4¾ins. by ½in.
Drawer Floor (I)—One—11½ins. by 8½ins. by ½in.
Main Front (J)—One—11½ins. by 5ins. by ½in.
Runners (K)—Two—6½ins. by ½in. by ½in.
Angle Bend (L)—Two—10⅝ins. by ¼in. by ½in.
Angle Bend (M)—One—11½ins. by ¼in. by ½in.
Shelf Fillet (N)—One—11½ins. by ½in. by ½in.
Stiffening Fillet (O)—One—4ins. by ½in. by ½in. spare from (E).
Drawer Handle—From odd spare wood.

Leaded Windows—(*Continued from page 341*)

where the window treated belongs to a bathroom or lavatory, where privacy is necessary. The colour is applied to the inside of the window, dabbing it on with a piece of rag, until the desired tint is obtained.

Admittedly such methods of application rather messes up the fingers, and a cleaner system of colouring is to use the dabber, shown at (E) in Fig. 2, and mentioned before. A piece of tin or even an old postcard will be handy here to use as a protective screen to prevent the colour spreading beyond the pane or division intended.

There is another use for this lead, and that is to hide a joint between two panes of glass, say, in such cases when two or more smaller panes are used to glaze a window in place of one large enough. Large panes become expensive, and it may be unnecessary to buy one if some smaller ones are to hand.

For example, in design (B) a large window was filled up with four smaller panes of greenhouse glass, which happened to be available. The joints between were at places lettered (a-b-c) and these joints were covered both sides with the ⅜in. strip. The rest of the strips were of ¼in. wide stuff.

It will be noticed that the simple design embodied the jointing strips, and there is no sign whatever that four separate panes of glass, instead of one were used. Of course, some diagonal leads could have been added here, or other additions to the design, but it was desirable to obscure as little as possible of the light, hence the open centre part.

Altogether, the work is very interesting, and any reader seeking a fresh craft, and we all like a change sometimes, may well try this leaded light work, which is not confined solely to windows but can be used to beautify the glass panels of a cabinet or book case, or to adorn a spare pane of glass for use in a fire screen.

The handyman can beautify his home by making

SIMPLE LEADED WINDOWS

MOST readers have seen those artistic leaded windows in country cottages and old houses, and sometimes in the modern houses about. These impart a charm that can be very pleasing. The construction of these windows by the conventional methods is difficult, but a much simplified system is now available, whereby the merest tyro can do the work successfully.

It consists in cementing specially prepared strips of lead to the glass, quite an easy work, and the results look quite as well as the professional job. The lead, cement and colours can now be obtained from many hardware shops, and an interesting job it is to apply the lead to one's own windows, and gain that quaint, cosy effect that leaded glass seems to give.

It will be understood that the lead can be applied to the glass as it is, after cleaning, of course. The possible designs are endless, but readers would be wise to choose a simple one to start with.

Designs

Two samples are given in Fig. 1, at (A) and (C) and it is entirely optional on the reader's part whether he accepts the designs as they are, or in the case of (A) omits the central ornament, and in (C) ignores the border. A sheet of designs can also be bought for a few pence.

The only tools required are sketched at Fig. 2. (D) is a wooden peg, with half the double prong sawn off. It is used to press the lead into close contact with the glass. (E) is a stick of wood, with a small pad of cotton wool, covered with a piece of rag at each end, for applying the colour to the glass afterwards to give the 'stained' effect if desired.

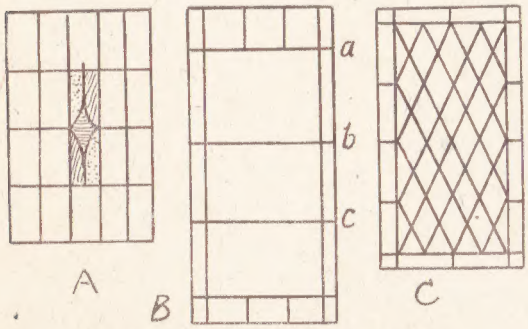


Fig. 1—Some simple patterns to use

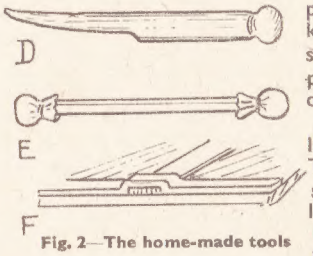


Fig. 2—The home-made tools

Marking Out

To commence the work, cut a sheet of thin white paper to the exact size of the pane, and on this draw the chosen design. Use a thick pencil for this, one of those blue or black parcel pencils would do nicely. The design is then stuck to the inside of the window with a spot or two of gum, just enough to keep it in place, and no more.

You want a small table now, on which the lead may be laid, and carried out near the window. The lead is supplied in two sizes, ¼in. and ⅜in. strip, and readers can choose the size they prefer. The roll of lead is pressed into eight strips, which can be torn off as required, quite easily.

Fixing the Strips

Calculate roughly the length of lead needed for the job and cut off the roll. The cement should be stirred up a little with a wooden stick, and be then applied thinly to the back of the strips. The stuff is thick and sticky, so a soft brush is useless for spreading it on; what is needed is a hog's hair brush of the small size, such as house painter's use.

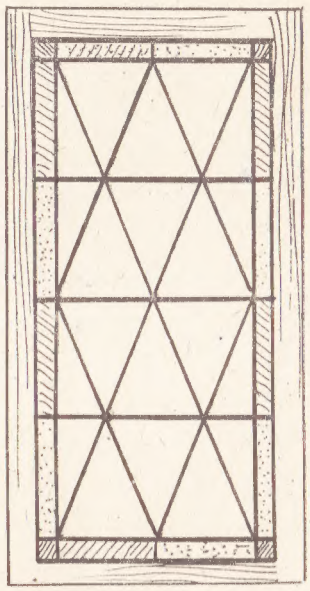
Tear the strips of lead off as required, tearing not sideways, but away from you. Pull the lead straight (it will curve a little as torn) and press it down to the glass bit by bit. Follow on with the wood peg to make it adhere well. The cement will get on the fingers during the work, and it is best to keep a rag at hand, moistened with paraffin or turps, to wipe the fingers clean now and again, to avoid soiling the glass.

Curves

Curves in the design are easily managed, the lead bending quite easily, but the inner edge of it will cockle up and should, therefore, be pressed down at intervals to make it adhere. Afterwards, the wrinkles can be smoothed out by gently rubbing over with the peg.

No cut ends must be left uncovered, as these may catch up when the glass is being cleaned. Those at the extreme sides are covered by a flat strip of lead, supplied with kit of materials, and is cemented and rolled on like the rest. Applied round the window, it not only covers the cut edges mentioned, but imparts a finished appearance to the work. The inside cut edges, such as occur in design (C) are covered by the inner strips of the border.

Some sequence is, therefore, necessary in laying the lead to ensure covering the ends properly. No difficulty, whatever, arises over design (A) but it should be apparent that the central ornament must be applied first, in order that the subsequent strips can hide the ends of the curved portions in the middle.



Diagonal Patterns

In design (C) the diagonals are laid first, then the short horizontal bits, and top and bottom vertical bits, which reach to the edges of the pane. Follow on with the border strips and finish with the binding lead.

In most designs, the lead strips, perforce, pass over each other, and they should be well pressed down to contact closely, as in detail (F) in Fig. 2. The sharp edges of the peg will be most useful here to mould the top lead over the one beneath. As the work progresses, a sharp eye should be kept to see if any parts of the lead strip rises from the glass, and such parts be pressed well and firmly down again.

When the work is completed, leave it alone for an hour or two. Then clean any surplus cement, squeezed from pressure on the leads, quite off with a rag, just made moist with paraffin oil or turps.

It is as well not to disturb the finished job for a while as the cement may take some time before setting hard. Another point is not to apply the lead to the glass directly it is cemented, but rather to allow a lapse of an hour, or even two, for the stuff to get tacky.

Stained Glass

With the kit of materials is included a tin or two of coloured varnish, for those wishing to include a stained glass effect. This is especially to be recommended

(*Continued foot of page* 340)

Decorate your walls with simple
BORDER STENCILLING

DISTEMPERING the walls of houses is becoming increasingly popular, not entirely due to the scarcity and expense of wall paper, but rather to the fine colourful quality of the modern product. But no distempered wall really looks complete without a border to finish at the ceiling.

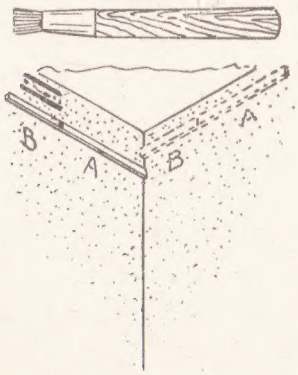
It is true that a fanciful decorative paper border can now be bought, but this can be comparatively expensive, too, costing, perhaps, as much as the distemper, and though it looks nice enough to finish off wallpaper, it seems incongruous in company with distemper. In short, it does not suit.

Simple Designs

An alternative to this is to stencil a border, either with flat paint, or distemper itself, the latter, of course, of a contrasting or harmonising colour. The necessary stencil can quite easily be cut, and the actual work of stencilling is simple enough. At Fig. 1, a group of four simple designs are given, though, of course, artistically inclined readers may prefer to design their own.

A strong cartridge or manilla paper is about the best material to use, and the only implement a sharp pointed knife. In the absence of a proper stencil knife, an ordinary pocket knife serves quite well. It soon blunts, however, and a strip of wood, to which a piece of fine emery cloth has been pinned, should be kept handy for putting and keeping an edge on the knife.

A piece of thick glass should also be provided to support the paper on while



cutting. It is the glass, of course, that soon blunts the knife, but it is necessary to get a clean cut edge on the pattern, and the glass underneath helps in the matter.

Cut the paper to the outside dimensions of the chosen pattern, pencil on it the area to be devoted to the design, and divide lengthwise into spaces of 3ins. each, or in the case of the second design down, the old but popular 'key' border, spaces of 2ins., one for each complete 'key'. To this latter design add six lines ¼in. apart, then the border can be quite easily copied. The other designs are simple enough to be copied freehand.

Cutting the Pattern

Lay the paper on the glass, and cut out the pattern with the knife. Let the paper slide over the glass, as the direction of the cuts makes necessary, but always hold it quite firmly by pressure of the fingers, as should the paper slip, the knife may leave the lines and cut away where not wanted.

Take great care also that the knife slips not when cutting the narrow ties, which divide the component parts of the pattern, though if this should happen, an effective repair can be made by the use of adhesive tape. Those circular spots could be more easily cut by the use of a suitable punch, holding the paper on a piece of hardwood for the purpose.

Varnish

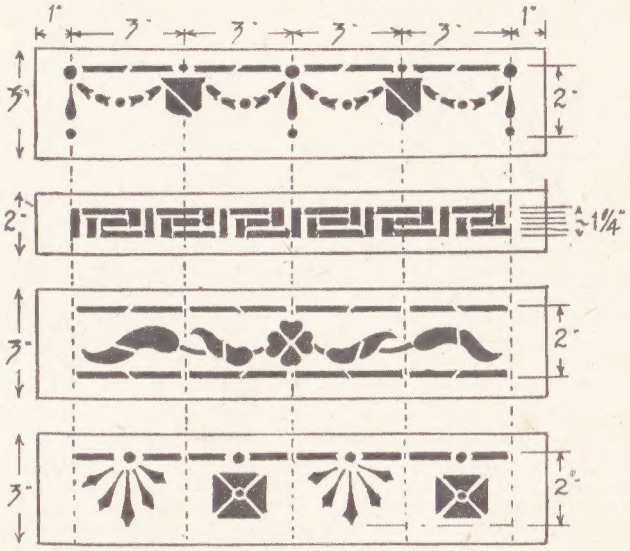
When the design is fully cut, the stencil should be given two or more coats of varnish, to help it repel the water in the distemper, and cause it to last out, at least for the job. When the varnish is quite set, the stencil is ready to use. Whether flat paint or distemper is to be employed for the work, the stuff should be thick, say, of a pasty nature.

Oil paint is not recommended, as the oil tends to spread out under the pattern and soil the surface, besides blurring the lines. Whichever is chosen, it should be, naturally, of a different colour to the rest, or at least a darker tint.

An ordinary paint brush is no use for stencilling, as the brush is not drawn over the work, as in the usual practice, but dabbed on. There is no need, however, to really purchase a proper brush, though one would last for a long time come to that, if the reader has a worn paint brush about.

This can be cut across, leaving the bristles ½in. long, and flat across the end, not pointed. In Fig. 2 the ideal form of brush is sketched at the top, and will give a good idea of what is wanted.

The patterns are repetitive, and could be laid against the wall, and shifted along



as done, until the whole length is completed. This method, however, often results in some smudging, as the paper stencil contacts some parts of the design just done. A safer plan is to do alternate portions round the room, and then to return over the ground, and finish the blank spaces. Each length of pattern is just 12ins. long, so if a 12in. space is left between each on the first round, the second round will fill in accurately.

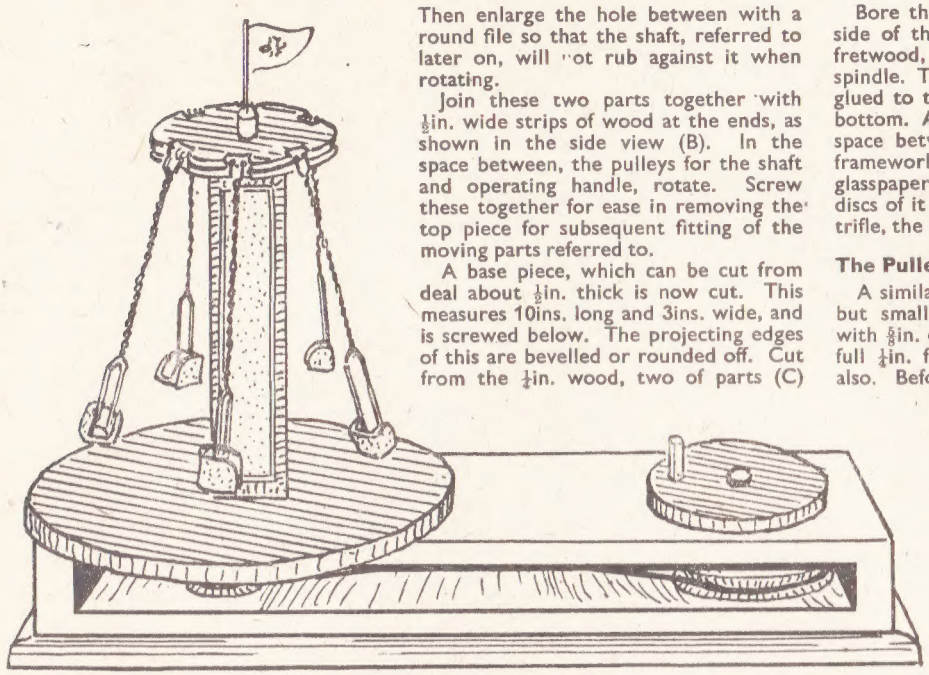
Measuring Strip

If this is adopted, use a 12in. strip of wood for measuring off. When the corners of the room are reached, the accurate space to leave can be measured with the stick by pencilling the distance on it from the end of the pattern just stencilled to the corner (call this A), and then laying it to the other side of the corner, where distance (B) is the remainder.

When the whole is finished, go over the border carefully, and make good with the brush any defects that may have occurred. The job should then look well and be worth all the trouble expended. (379)

Some odds and ends complete this working

MODEL CHAIROPLANE



AN interesting working model this, of a fair attraction. It is of reasonably simple construction, with nothing difficult to encounter, and should prove a novel piece of work. It follows out fairly closely the original prototype, with what might be the tricky parts omitted. Carefully made, the little chairs will swing out in circle, just like the real thing, when the handle is turned.

Framework

Some of the parts are grouped together in Fig. 1, forming what we might call the framework of the whole. From ¼in. wood cut two of parts (A). Run a pencil line along the middle, and on this, at the points indicated, bore holes ¼in. diameter through both.

It would be as well to temporarily nail both together, and bore the holes through both at one operation. In the top piece, at the left, saw out ¼in. by ⅛in. mortise slots, each side of the hole.

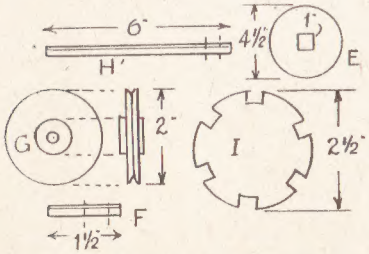


Fig. 2—The pulley parts

Then enlarge the hole between with a round file so that the shaft, referred to later on, will not rub against it when rotating.

Join these two parts together with ⅛in. wide strips of wood at the ends, as shown in the side view (B). In the space between, the pulleys for the shaft and operating handle, rotate. Screw these together for ease in removing the top piece for subsequent fitting of the moving parts referred to.

A base piece, which can be cut from deal about ⅛in. thick is now cut. This measures 10ins. long and 3ins. wide, and is screwed below. The projecting edges of this are bevelled or rounded off. Cut from the ¼in. wood, two of parts (C) and (D). In the latter cut some ½in. long tenons at the bottom ends to fit the mortise slots in the top piece. Glue and nail these parts together to make a square hollow pillar, 1in. each way, and fit in the top piece.

Cut a 1in. square piece of the wood,

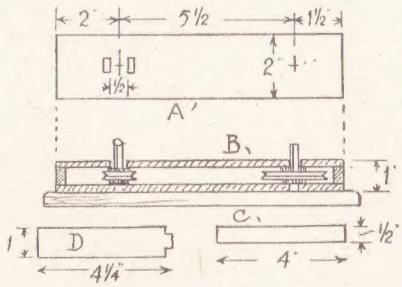


Fig. 1—Section and plan of base

and in its exact centre bore a ¼in. hole. Glue and nail this to the top of the pillar, and, to ensure easy rotation of the shaft, see that the holes in top of pillar and bottom piece of the framework are truly in line. Test this with a piece of ¼in. round rod.

From ¼in. wood cut the part (E), shown in Fig. 2. Push this over the pillar, removing the top part (A) first, and screw it from below (A), fixing it firmly to the latter part. From ¼in. round wood rod, cut the spindle of the handle (F) and the shaft (H). Also from ¼in. wood cut the round disc (G), and file a groove round its edge rather deeply.

Bore this ¼in. in the centre and each side of the disc glue ⅜in. discs of ⅛in. fretwood, boring these also for the spindle. This pulley, as we can term it, is glued to the spindle, ¾in. full, from the bottom. As the pulley is to rotate in the space between top and bottom of the framework, it would be as well to glasspaper the outer sides of the small discs of it to lessen the total thickness a trifle, the pulley will then turn easier.

The Pulley

A similar pulley is made for the shaft, but smaller in diameter, 1in. in fact, with ⅜in. discs each side. This is glued a full ¼in. from the bottom of the shaft also. Before fitting these parts in their respective positions, a little lubricant should be applied to the bearing holes to ensure easy motion. A spot of lard, with a pinch of powdered black lead will be about the best lubricant to use.

Make it a stiff paste, and work it well in the bearing holes in the framework, and at the top of the pillar. Now place both shaft and spindle in their holes, replace the top part, and screw down. It will be seen that fresh screw holes must be made to fix the top down again to replace those covered by the circular part (E).

Winding Cord

For a band, to connect the pulleys, very thin whipcord or common grocer's twine will do nicely. Pass this round the small pulley, cross the ends and pass those round the large pulley, and there knot tightly. Complete the handle by gluing to the top of the spindle a 2in. diameter disc of the ¼in. fretwood, with a small piece of the rod glued in it to grip with, as seen in the general view. Let the glue harden, then on rotating the handle, the shaft should turn easily. It will improve when 'worked in' and the lubricant has not been skimped.

Cut part (I) from ¼in. wood, and divide the edge into six equal parts. At these spots saw out the slots shown, ⅛in. wide and ¼in. deep. File a groove in the

(*Continued foot of page 344*)

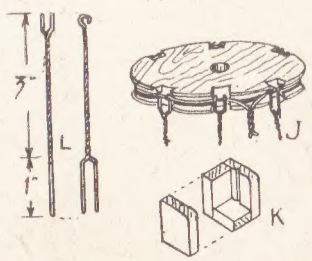
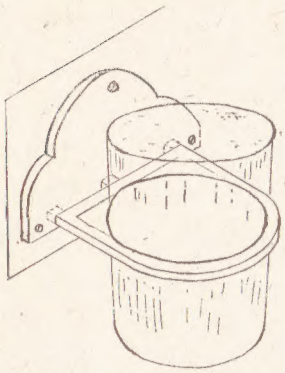


Fig. 3—Pillar parts

A practical article for the bathroom is this

PLASTIC BEAKER RACK



THIS is another useful but light, cheap and handy plastic model, which can be made from a rectangular piece of Perspex 6ins. long, 4ins. wide, and 4mm. thick.

Its construction requires accurate fretsaw work, neat filing, and plenty of patience.

Your first task is to cover the Perspex sheet with a thin but good quality coloured gummed-on-one-side paper. When this is dry, trim the overlap to the perimeter of the plastic.

Fretsaw Cutting

Now draw the central line lengthways on the gummed paper, and set out the front view and the plan of the beaker holder, exactly as is shown in the diagram. Use the steel point of your compass very lightly, and do your drawing work accurately. When this is completed use your fretsaw to remove the outer shaded portion of the plan of the beaker holder. Keep to the outside of the cutting line so as to allow for smoothing and finishing.

To remove the circular shaded area, take your hand-drill fitted with a No. 17 drill, and make a hole near to the circumference inside the circular area of the Perspex. Release one end of the fretsaw blade and thread it through the hole. Then re-adjust the fretsaw, and cut out the circular piece on a V-block fixed in your vice.

Now fretsaw along the curves of the back and then across the dotted line to separate the two pieces of the model. Finish the front by cutting out the three $\frac{3}{16}$in. pins. Again keep to the outside of the contour lines of the pins. Remember that it is better for the pin to be a little too wide than too narrow.

Cleaning

With No. 1 and No. OO glasspaper smooth down all edges and curves of the front piece except those of the three pins. To make the slots in the back for these pins drill holes with a No. 14 drill, and then file each of these to shape with a 3in. needle file.

By frequent testing you will eventually find a tight fit for each of the pins. Now drill out the wood screw holes with a No. 30 drill, and counter sink these to receive size 4 chromium plated wood screws to fasten the model to the woodwork.

Assembly

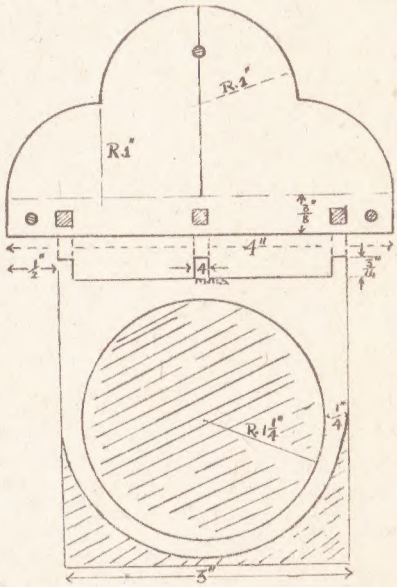
When both parts are entirely finished, make a final trial fitting. Then to fuse the parts together, dip a No. 3 paint brush into some concentrated (glacial) acetic acid and smear a layer of this on the sides of the pins, and along the shoulders between them. Poke the slots with the brush, too.

Fit the parts together again, and leave for 24 hours. If your work is good and the fit is tight, there will be no need for any external pressure. When you resume the work fix the bracket in a smooth-jawed vice, and cross file away the slight protrusions of the pins behind the back with a 10in. smooth parallel flat file. Clean up the joints and the surface of the Perspex with your glasspaper.

Polished Finish

To give your work the expert's finish, remove all scratches with the glasspaper, and rub down with a piece of old stocking moistened with Silvo. Then wipe away the dried Silvo, and rub vigorously with some clean silk.

Now your model is ready for fixing to the woodwork of the room where you want to use it. (359)



Chairoplane—(*Continued from page* 343)

edge, exactly as done for the pulley, but not quite so deep, and bore it to fit the shaft.

Some half dozen hangers must now be made, to which the chairs will be fitted. These are shown at (L), and are made from wire, not too stout a gauge. Cut twelve pieces about 6ins. long, and treat each two of them as a pair to make one hanger. Proceed in this manner.

Ring Parts

At the tops of each pair, twist the wires to form tiny rings. Then, about $\frac{1}{4}$in. below these, twist the wires together for a length of 3ins. Open out to $\frac{1}{4}$in. apart and straighten the remainder parallel. Cut all the hangers to a length of 4ins., and try to get the whole six alike.

The chairs (K) are made from $\frac{1}{4}$in. fretwood, for the centre parts, with side pieces of $\frac{1}{8}$in. wood. They should be about $\frac{5}{8}$in. square. In the side pieces, before they are glued in place, make a shallow saw kerf, where shown, in which the wire ends of the hangers can pass. When the glued up chairs are set, push the wire ends through these saw kerfs, and bend over about $\frac{1}{4}$in. of each inwards to keep them from working out.

Assembly

These are now fitted to part (I) to swing quite freely. Get a few inches of thin iron wire, and thread it through the eye holes in the tops of the hangers. Pass the wire round the groove in (I), see each hanger is in its respective slot, then twist the ends of the wire until it sinks into the groove.

This will be better explained by looking at detail sketch (J). Now glue (I) to the shaft, letting it clear the top of the pillar by about $\frac{1}{8}$in. All being well, as the shaft rotates, the chairs will swing round and out merrily.

Painting

Finish the toy with a stout pin, driven into the top of the shaft, and furnished with a tiny flag. Paint the whole attractively, any bright colours will do, the brighter the better. One 7ins. by 14ins. panel of fretwood will provide the material for all parts of that thickness, with a 3ins. by 10ins. piece of deal for the base. One 4ins. by 9ins. panel of $\frac{1}{8}$in. wood is needed, unless the reader already possesses a few scraps of that thickness, as little is necessary, about 9ins. of $\frac{1}{4}$in. round wood rod for the shaft, etc. (368)

How to convert a 'grandfather' case into a HALL CLOCK CUPBOARD

A GRANDFATHER clock in the hall, undoubtedly, gives an air of distinction to a house, but it is not always possible to fit such an article of furniture in some of the smaller halls. This is where the more modern grandmother and the even smaller granddaughter clocks are extremely useful.

The subjects of this article is just such a granddaughter clock of quite modern design. It is planned to house in the top portion any clock you may have available and, if possible, one without a pendulum. Instead of the usual pendulum and weights, the base of the clock case is divided off to accommodate umbrellas, and with a small compartment for gloves or any other odds and ends.

General Appearance

The old grandfather clock cases were mostly made of either oak, walnut or mahogany, but you must make your own choice regarding the kind of wood to use. It may depend on the present hall furnishings, or you may have a small stock of wood you wish to use up. You can, in fact, use practically any type of well seasoned wood and make a really satisfactory job.

You may have to vary some of the measurements slightly, as for instance, if you use plywood, some form of backing and extra strengthening bars may be needed.

The main framework of the case is made up of two sides 4ft. 9ins. long, 6ins. wide and ½in. thick: the front is the same length and thickness and 10½ins. wide, and the back can be of plywood. The back is strengthened by bars of wood 3ins. wide and ½in. thick across the top, bottom and centre.

Refit the Door

Provided the door in the front is marked and cut out carefully, the actual piece of wood taken out can be used for the purpose. The writer used a fretsaw on the corners and a fine keyhole saw for the remainder of the work which left just a nice gap, and when finished off with a narrow beading glued round, made a perfect fitting door.

This part can all be done and a neat pair of ornamental hinges fitted before the case is put together. The front is then ready to be glued and pinned to the sides: the back must wait until some of the interior fittings have been made.

Shelf

First of these then had better be the shelf for the clock to stand on, and its position will depend upon the type and size of the clock. It will be seen from the drawing that the top portion, or hood of the clock as it is called, is 12ins. deep, therefore the centre of the clock hands must be 6ins. from the top. From this the position of the shelf can easily be calculated.

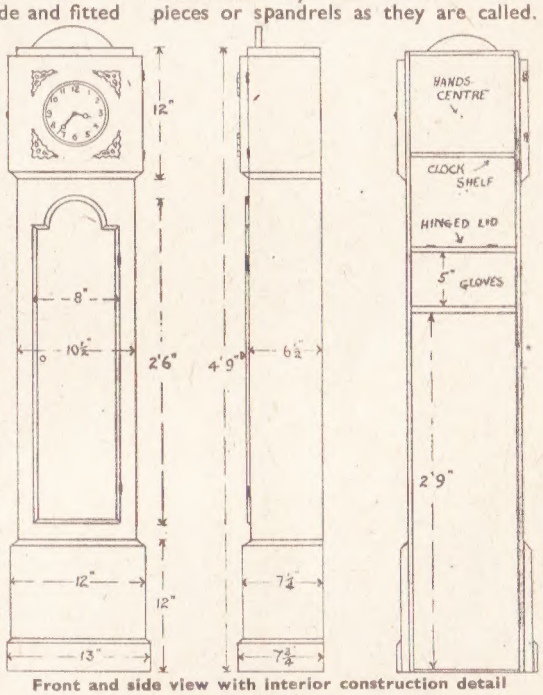
The clock can just stand on the shelf or it can be secured in a framework of some sort. It depends upon the type of clock used and whether it is wound up from the front or the back, and this little problem must be left for you to decide. A piece of ½in. thick wood will be about right for the shelf.

A hole is cut in the hood portion of the case at the front about 8ins. square, which will allow ample space for the removal of the clock for winding if it is necessary.

The base can now be made and fitted on to the framework. For this ¾in. thick boards are used, but ½in. ones will do nearly as well, the only difference being a more steady and better balanced case when the thicker boards are used.

The height of the base is 12ins., made up of two or more boards glued and pinned on. Using ¾in. boards the front will be 12ins. wide and the sides 7¼ins., the corners being mitred to produce a better finish.

The top edges can be plain bevelled or an ornamental moulding can be worked on. A strip of 3ins. wide and ½in. thick wood is cut into a 13in. length and two 7¾in. lengths and fastened right at the bottom, the corners are again mitred and the top edges moulded as before. A few panel pins are used to give added strength when fixing all these boards in position.



Front and side view with interior construction detail

Top

We can now build up the hood or top portion of the case. As the front is in the form of a door, the hood is made slightly different from the base, the corners not being mitred.

For the sides two pieces of wood are cut 11½ins. long, 6½ins. wide and ½in. or ¾in. thick, the former thickness, probably, being best for the job, as it would not be top heavy. Bevel off the bottom edges or else work a moulding similar in pattern to the base.

The door could very well be made of plywood fixed on to a light framework to make up the necessary thickness of ½in. or ¾in., whichever is decided on. The width of the door when using ¾in. wood is 12ins., but for ½in. thick wood, this will be 11½ins., the depth in either case being 11ins.

A bevel or moulding is not worked on the bottom of the door, but is a separate piece of wood glued and pinned to the case. The door will then have something to rest upon when closed.

The Dial

Before fixing the door in position with a small pair of hinges, a circular hole is cut in the centre to fit the clock dial. It can be left quite plain or ornamented to suit your fancy, such as a bevel either on the outside or inside, or a thin circular overlay can be fastened about ½in. from the hole.

The outside of the door can also be ornamented by four fretted corner pieces or spandrels as they are called. Many of the brass dials of the old grandfather clocks are ornamented in this manner and some are very fine examples of the patience of the old craftsmen.

A piece of ½in. wood is fastened on to the top of the case and finished off with a semicircular piece 7ins. long and 2ins. wide, glued and pinned on, as shown.

Although it is not necessary to fit a bottom in the case, it would certainly be an improvement, and need not consist of more than a piece of plywood well fitted.

The internal fittings to the clock case are quite simple and do not require much explaining. They can, of course, be altered and improved to suit your own requirements.

The bottom portion is reserved for umbrellas and 33ins. has been allowed for them. A piece of ½in. wood is, therefore, placed at this height from the

(*Continued foot of page 346*)

Experiments with salicylic acid and sodium salicylate in HOME CHEMISTRY

MOST home experimenters have at some time tested for ferric salts with sodium salicylate and been rewarded with a splendid purple colouration.

Though this is our main use for sodium salicylate, there are many other interesting experiments we can do with it and with salicylic acid itself. 1oz. of each may be bought for a few pence from any chemist, if you have not already got them.

Let us start with salicylic acid. This acid occurs in nature in the meadow-sweet plant and in oil of wintergreen. It is used as a preservative and as an antiseptic, and for manufacturing our old headache stand-by, aspirin.

Shake a little of the acid with cold water in a test tube. It does not dissolve. Now heat it. As the water nears the boiling point the acid dissolves. On cooling, it crystallises out in long white needles.

Carbolic

Salicylic acid gives us one method of making that useful disinfectant carbolic acid, or as it is known to chemists, phenol. When salicylic acid is heated with lime (calcium oxide), the lime removes carbon dioxide from the acid and becomes chalk (calcium carbonate) and converts the acid into phenol.

Try this by mixing intimately equal bulks of salicylic acid and lime and heating in a dry hard glass test tube. Slope the test tube down with the open end over an evaporating dish. Now heat the tube. Immediately the sweet smell of carbolic acid will be noticed and drops of it will condense near the open end of the tube and fall into the basin.

You can prove this is phenol by taking up a drop on a glass rod (do not touch it with the fingers, as it raises blisters) and dissolve it in water in a test tube. Add ammonia and a filtered solution of bleaching powder and warm it, when a blue colour will appear.

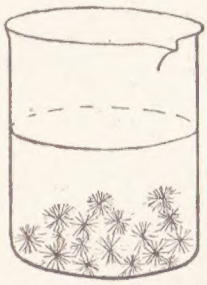
The residue in the tube will effervesce with a dilute acid, and if a glass rod dipped in lime water be held in the mouth of the tube it will become milky from carbon dioxide. This shows that the lime has become calcium carbonate.

If we boil salicylic acid with dilute nitric acid a curious new acid is formed called nitrosalicylic acid. To prepare it take some salicylic acid and boil it with dilute (strength about 10 per cent) nitric acid. The solution darkens to deep red-brown. Add a little more nitric acid and reboil it.

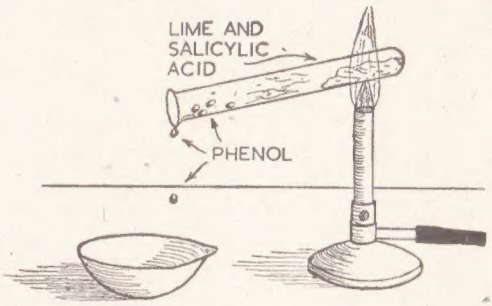
If the solution does not darken further, the reaction is complete. On cooling the acid separates out as a buff powder. Filter it off and dissolve it in a small quantity of boiling water. As the solution cools the acid separates out as small white felted needles.

Experiments

And now let us do some experiments with sodium salicylate. Its appearance differs from salicylic acid, for its crystals look like pearly white scales. It is also unlike the acid in its solubility, for it is very soluble in cold water.



Crystals of bismuth salicylate



How to make carbolic acid

We can use this difference to prepare the acid. Make a solution of sodium salicylate and add to it dilute hydrochloric or sulphuric acid. A white precipitate of salicylic acid is immediately formed. Filter this off and dissolve it in boiling water. The familiar needles of the acid will crystallise out on cooling.

Salicylic acid, of course, forms salts not only with sodium, but with other metals. Most of them are soluble in water. Some have beautiful crystalline forms; for example, bismuth salicylate.

This is easily prepared by mixing cold solutions of bismuth nitrate and sodium salicylate. It is precipitated as a white powder. Filter this off and put it in a small beaker. Add a little water and boil it. The salt dissolves and as the solution cools, pretty spherical groups of colourless needles separate out.

Lead salicylate may be prepared in the same way, using lead acetate instead of bismuth nitrate. Lead salicylate crystallises from hot water in star-like groups of small colourless prisms.

Copper salicylate, though soluble in cold water, may be precipitated by using strong solutions. Add powdered copper sulphate to boiling water in a wide test tube until no more dissolves. As it cools the excess copper sulphate crystallises out. Pour the strong solution off the crystals and add to it a strong solution of sodium salicylate made by dissolving the salt in an equal bulk of cold water.

A lovely grass-green precipitate forms. Filter this off and add to it just enough hot but not boiling water to dissolve it. A deep green solution is formed. From it copper salicylate crystallises out on cooling in tufts of light blue needles.

And now let us end these experiments with a nice smell. Put a little solid sodium salicylate in a test tube, cover it with methyl alcohol and add a few drops of strong sulphuric acid. On warming it you will notice the fragrant odour of oil of wintergreen (methyl salicylate), which is so useful as an embrocation. (283)

Clock Cupboard—(*Continued from page 345*)

bottom and is in reality the bottom of a small compartment designed for gloves and other small articles. The front of this compartment is a strip of thin wood or even plywood about 5ins. in height and on top of this another piece of thin wood to form a lid. This can be hinged direct on to the back, or, if preferred, on to a 1in. wide strip of wood fastened on to the back.

A few brass cup hooks screwed under the base of the glove compartment are useful for clothes brushes, keys or dog lead, and put a finish to the interior fittings.

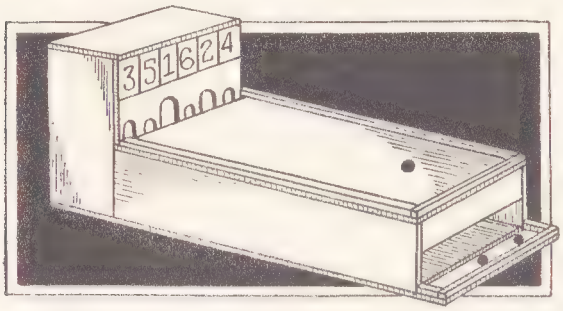
The case can now be glasspapered smooth, nail holes, if any, filled with a wood filler, and then polished. The ideal finish for any worth-while piece of furniture is, undoubtedly, by wax polishing, but when properly done, this requires patience and generally takes rather a long time.

To get the best results the polish should be well rubbed in and then left until next day, when the surface should be well rubbed with a clean cloth. Then apply some more polish and repeat the process until the required finish is obtained. Some woods may require some weeks spent on them, but the final result is well worth the time spent on doing it.

A much quicker method is to go over the case with a good french polish (366).

An ingenious and attractive game—

ELECTRIC MARBLE BOARD



THE Marble Board shown here has several modern features that make it an interesting piece of work to make up and a fascinating game to play. When a marble is successfully holed it automatically lights up the relative score for that hole, the marble then being returned to the front of the board ready for re-playing. The simple lighting system is provided by a torch battery and flashbulbs, all housed inside the case.

It will be readily appreciated that the measurements given can be easily varied as required to suit whatever material is available. The dimensions shown in the cutting list provide a board that is large enough to make the game interesting but not too intricate for the home handyman to tackle with confidence.

Wood of ¼in. thickness is allowed for throughout, though, if necessary, some of the pieces might equally well be cut from stout cardboard reinforced at the corners, to save wood in these times.

Materials Required

Very little other than the wood shown is required, and that only the odd bits and pieces that the handyman collects out of habit and which always 'come in useful sometime'. A piece of 2 round iron rod (or steel knitting needle); some thin metal strip from which to cut six pieces each 3½ins. by ½in.—thin brass, tin or sheet lead will do; six low-consumption flashbulbs and a single cell torch battery; a strip of Perspex or similar transparent material to cover over the cut-out score figures; a few oddments of dowel; and, of course, a supply of marbles!

The Case

Make a start with the case itself. It will be seen (Fig. 1) that the base extends the full length of 20ins. The long parts of the sides are 15¼ins. long and the upright side pieces 2⅜ins. wide and 6ins. high. This leaves a gap at the serving end of the board, where the marbles are delivered. They are prevented from rolling off by three thin strips glued round the bottom edge as shown, and similar strips are glued round the piece forming the rolling board, for the same reason.

The end piece at the serving end is 7½ins. long and only 1½ins. wide, to leave the necessary gap for the marbles to roll off the delivery. The other end of the case is in two parts, the bottom piece 1½ins. and the top piece 3¾ins. wide. This leaves a space of ¾in. between, through which the electrical contact makers project slightly, in the manner explained below.

The lid, measuring 8ins. by 3ins., is hinged on as shown, and the scoring board (which rests on the rolling board) measures 8ins. by 3ins. also. This scoring board is fretted out, as shown at Fig. 2, with six holes of various sizes and corresponding figures above the holes. The scores shown are just one suggestion; but take care to see that the lowest scores are placed over the biggest holes, and that the highest are situated between the lower ones.

Make sure, too, that the marbles to be used do really pass through the smallest hole—otherwise one's friends may come to take a poor view of one's sportsmanship!

The Internal Woodwork

A general view of 'the works' is shown at Fig. 3. When the marbles pass through a hole they roll down a slanting board to the contact makers, as seen at Fig. 4. This board measures 7½ins. long and 1¾ins. wide. It has to be fixed to the rolling board at an angle, so needs one edge tapering for this; and to give plenty of clearance for the marbles to get away, the bottom edge is also tapered, as shown.

To hold this slanting board in position two little arc-shaped pieces are cut and glued to the sides of the case. But it is best to leave these until later when the exact size required can be easily gauged. Divide the board into six equal sections, then glue across it some small strips, in pairs tapering together, to guide the marbles down to the contact makers, as shown at Fig. 4.

After the marbles have pushed forward the contact makers they fall on to another slanting board which delivers them to the playing end of the case. So cut this board next, measuring 17½ins. long and 7½ins. wide.

A lamp board is required, 7½ins. long and 2¾ins. wide, and a strip 7½ins. by 1¼ins. to form the base of the lamp houses. The spaces for the lamp holders are then divided off with five little pieces each 1½ins. square.

The Lighting

Now we come to the lighting arrange-

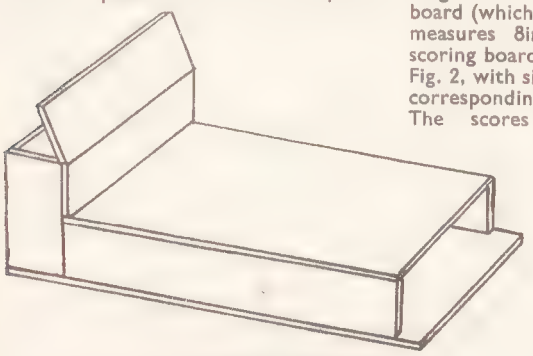


Fig. 1—General shape of box

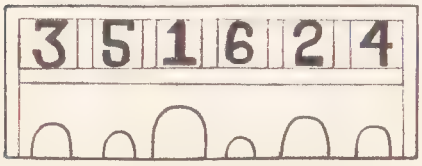


Fig. 2—The entrance arches and numbers

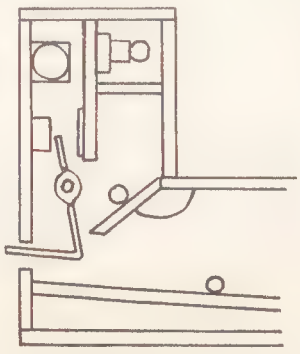


Fig. 3—Section of top end

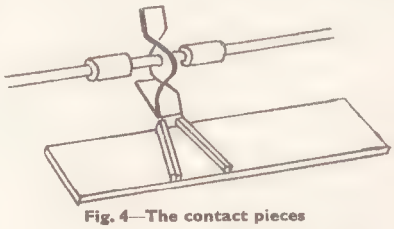


Fig. 4—The contact pieces

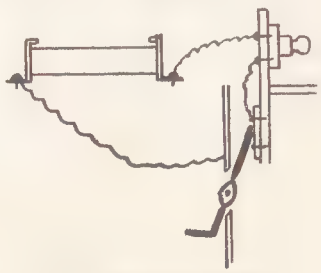


Fig. 5—Electrical contacts

ments. Six bulb holders are screwed in their places along the top of the lamp board (not forgetting the two holes behind each for the wires to come through). At the bottom of the board and on the other side of it, six metal plates (tin will do well) each about 1in. square are screwed, one immediately under each lamp, as shown at Fig. 5.

The contact makers swing loosely on a metal spindle 8ins. long and about ¼in. diameter.

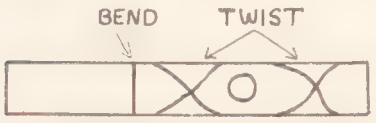


Fig. 6—Shape of ball piece

A piece of iron rod, or steel knitting needle, serves for this. Flatten it a little at each end, so that when later it is driven into the holes drilled for it in the sides of the case, it will not move round. For the contact makers themselves cut six pieces of the thin metal strip each 3½ins. by ½in. Bore a hole in each 1½ins. from one end, of just sufficient diameter to fit the spindle nicely and sharpen up the edges of the holes if necessary, so that the strips swing easily on the spindle. Now we have to bend them to the required shape.

For the efficient working of the toy it is essential that these pieces shall fall forward smoothly when pushed by the falling marble, and project out of the back of the case so that they can be pushed back to their original position afterwards. So it is worth while to experiment first with one, then make the others when just the correct position has been found. Fig. 6 shows their general shape.

About 1½ins. from the end that is furthest from the hole, they are bent to a rightangle. Between here and the hole they are twisted to a rightangle that way and at the other end given another twist similarly. If the metal is at all thick or stiff, the twisting is made neater by cutting the strips narrower at these points.

The holes for the spindle that are made in the sides are 2¾ins. from the bottom and ⅝ths from the back end. Put the spindle in temporarily, with one of the contact makers on it, for a trial. Normally the top end of the contact maker leans backwards a little and the bottom forward, to meet the marble. When a marble strikes the bottom part it pushes that back and the top end comes forward and touches the contact plate, which closes the lighting circuit on that number.

By means of the arc-shaped supports, arrange the slanting board to deliver the marble just at the right place; and glue a thin strip along the top inside edge of the case as a stop to prevent the contact makers from tilting back too far.

Assembling the Contact Makers

Having arrived at the position and exact shape for the contact makers, make the other five identical with the first. To position them on the spindle and prevent them from moving, five collars each 1½ins. long and (for the ends) two of ½in. are required. These can be cut from small metal tubing if available, or easily made from a piece of ½in. dowel. If the latter is used, cut off the lengths first, then bore down each with a hole of the necessary diameter, to allow them to slide loosely on to the spindle.

Thread the collars and contact makers alternately on to the spindle, making sure that all the space is taken up but that the contact makers are not too tight to move easily, then fix the spindle into the sides of the case permanently. Handymen who are good at tapping threads will make the spindle long enough to have a screw nut on either side of the case; but this is by no means essential, provided the spindle is held fairly tightly in its position.

Wiring Up

First make a simple holder for the single-cell battery, from two pieces of metal strip, as shown at Fig. 5, and screw them to the inside back of the case behind the lamp board. Do not forget to remove the cardboard lip at the bottom of the battery, so that contact is made with the holder at both ends.

CUTTING LIST
(for wood of ½" thickness)

No. of pieces	Description	Size
1	Base	20" × 8"
2	Sides	15½" × 2¾"
2	Sides	6" × 2¾"
1	Rolling Board	15½" × 8"
1	Front End	7½" × 1½"
1	Back End, top	7½" × 3½"
1	Back End, bottom	7½" × 1½"
1	Scoring Board	8" × 3"
1	Lid	8" × 3"
1	Slanting Board	7½" × 1¾"
1	Marble Delivery Board	17½" × 7½"
1	Lamp Board	7½" × 2½"
1	Lamp Compartment Base	7½" × 1¾"
5	Lamp Compartment Sections	1¾" × 1¾"

Connect one terminal of each lamp holder to a master wire running along the back of the lamp board and join this to one end of the battery holder. The other terminal of each lamp holder is wired to its corresponding metal plate below, and the other end of the battery holder is connected to the spindle.

To finish, hinge on the lid, cover over the cut-out figures with some transparent material, and go over the case with stain, varnish, or bright enamels as preferred. (380)

QUEER HOBBIES OF THE WORLD

IN the little town of Brightlingsea, Essex, lives Mr. W. Sutherwood, a local newsagent with a strange and novel hobby. In his leisure-time from selling newspapers and periodicals from his newsagent's hut on the beach at St. Osyth Stone, Mr. Sutherwood looked around for an unusual hobby which would occupy his time. So he started to collect matches—not with the idea of making one or other of the usual conventional bus or house or ship models from them—but to make himself a walking-stick. It took him a very long time, but by carefully interlocking the spent matches, gluing them together one by one, he was eventually able to build up a hard core of solid wood, strong enough to form the straight part of his stick. Then came the curved handle, which gave him much trouble, as the matches had to be broken with great care so that their outer surfaces when fixed into position formed a smooth curve. Much patience was needed to glue them together in this fashion, but at last the required shape and strength were achieved. Mr. Sutherwood's match-stick cane is just about the normal weight for an ordinary walking-stick, which is surprising, and is of the conventional size and design. It has been skilfully varnished to give a hard gloss finish, and is usable just like a straightforward stick. (280)

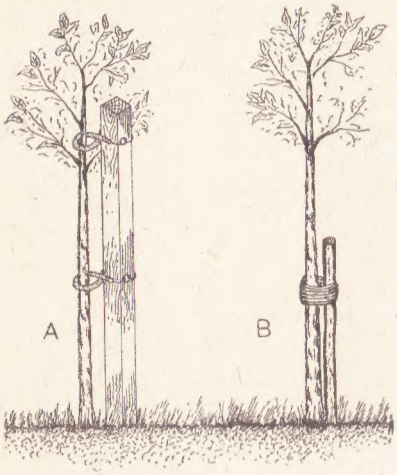
DR. CLAUDE BAKER GABB, of Tunbridge Wells, Kent, who died not long ago, had one of the strangest hobbies ever invented. Every weekday for some 30 years he looked through the 'Deaths' column in the press of this country and of any other country he could get hold of. His purpose was to note down the names, ages and occupations of all those who were 90 or over when they died. Then, once a year, he drew up a detailed summary of his unique findings. He discovered, for instance, that 1938 was the best year for longevity, for 531 nonagenarians died then. The lowest number was in 1918, when his figure was only 238. Over the whole of the time he pursued this hobby, he had records of over 13,000 people who reached the age of at least 90. He also gleaned other pieces of information. He revealed, for instance, that more women lived to a great age than men—the rate being nearly three women to one man—and that old age is commonest among clergymen and their widows, and in Canada and Ireland. As fate would have it, Dr. Gabb was able to follow his unique hobby right up to his own death at the age of almost 91. So he just qualified for his own list! (280)

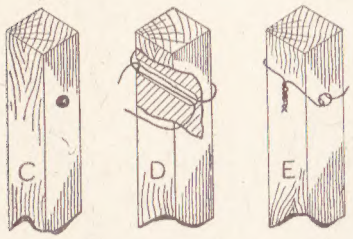
Make secure against weather with proper

FENCE AND TREE SUPPORTS

IT is a good plan to take a little care when supporting young trees in the garden if trouble and bad tempers are to be avoided. Take a look round at some gardens and it is surprising the number of small trees without support of any kind, many slanting over at a good angle as a result of high winds and gales.

Again it is difficult to know sometimes if the young tree is giving support





to the supplied stake, as for example indicated in view (B) in the accompanying illustrations. Clearly the stake is much too small for the size of tree indicated, and after a moderate gale or two, both tree and stake will be seen in anything but an upright position.

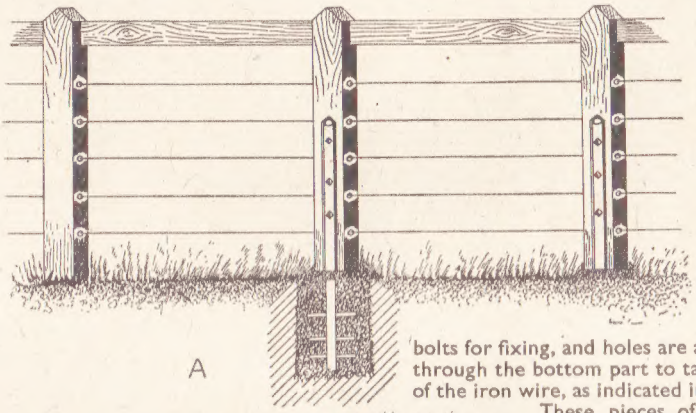
If the young tree is worth a support at all the job should be done in a little more thorough manner.

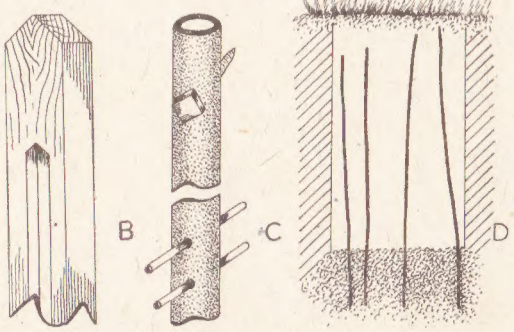
The writer finds the following method quite good and stands up to high winds and gales very well. The method of support is indicated at view (A), and shows the stake of ample size which is necessary to support the tree.

In place of the common method of binding the tree to the post with string, a much better way well worth trying is as follows. First have the stakes large enough, and make holes, as shown in view (C), one being near the top and the other half way down, as seen in view (A) A length of fairly strong galvanized wire is needed, also some pieces of strong rubber tubing.

The piece of wire is inserted in the hole, as seen in the section view (D), and the piece of rubber tube is wound round in contact with the tree, as shown in view (A). The ends of the wire at the back of the stake are twisted up with pliers, as shown in view (E). Provided, of course, the stake is driven well into the soil, young trees supported in this manner will stand up to rough weather very well. (377)

THE wooden posts of light fences are subjected to rotting away at ground level in just the same way as posts used for supporting heavy fences. Whereas repair work for heavy fences entails a more heavy form of support in the way of concrete posts well cleated and cemented in the ground, a light fence can be dealt with in a little more simple manner.





In the accompanying illustrations, view (A) indicates a form of light fence with the left hand post shown rotting at ground level, and the middle and right hand posts have been treated and supported in a manner described as follows.

The actual supports are in the form of galvanized iron tubing, odd lengths of which can often be obtained from builders or ironmongers.

The tubing should not be less than 1in. diameter, and of such length as to allow for about 2ft. in the ground and to reach about half way up the posts above ground level. A number of coach screws of the required length to pass through the tube supports well into the wooden posts are required, also some lengths of iron wire about ⅛in. diameter and, of course, some cement and small gravel and a little sand for making a concrete mixture.

The rotten portion of the post is best cut away, and then chisel a groove down the post to make a seating for the tube, as indicated in view (B). Holes are drilled through the tube to take the bolts for fixing, and holes are also drilled through the bottom part to take lengths of the iron wire, as indicated in view (C). These pieces of wire bind the tube and concrete, and ensure a good sound joint, as is shown in the middle post view (A).

The hole to take the tube should be about 1½ft. to 2ft. deep and about 1ft. square and a few lengths of the iron wire are driven in position, as indicated in view (D).

The tube is now bolted in position and the post drawn upright, after which the hole is filled in with a mixture of concrete. Puddle the concrete well into the hole with a stout stick to make quite sure of it binding to the tube and wire.

(378)

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